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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,858	02/14/2002	Dan A. Steinberg	23091/25	8738

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EXAMINER

STEIN, STEPHEN J

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 03/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/076,858

**Applicant(s)**

STEINBERG ET AL.

**Examiner**

Stephen J Stein

**Art Unit**

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-27 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-23 is/are allowed.
- 6) ☒ Claim(s) 10-14 and 24-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Information Disclosure Statement***

2. In their response to the last office action, applicant stated that US Publication Application 2003/0067069 cited on the form PTO-1449 received August 9, 2004 was incorrect, and should have been listed as 2003/0067049. This document has not been considered by the examiner because it has not been listed by the applicant on a PTO-1449. If applicant submits a PTO-1449 citing the document with the appropriate fee, the reference will be considered.

***Claim Rejections - 35 USC § 112***

3. Claims 10-14 and 24-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. The newly added limitations in claim 10, "having a minimum and maximum width" and "had a width less than or equal to the minimum width of the wet etched pit" are new matter.

***Claim Rejections - 35 USC § 102***

4. Claims 10, 12-14 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,738,145 (Sherrer '145).

Sherrer '145 teaches a micromachined optical fiber sensor comprising a single crystal silicon substrate, an etched fiber stop whole having two level stop hole (pit) where a hole is disposed in the center of a v-shaped pit and through the substrate (See Figure 12 and col. 7, lines 38-53). The reference further discloses that the hole has a width which is less than the minimum width of the top v-shaped pit (See Figure 12). Sherrer '145 still further teaches that an optical fiber disposed in the hole (See Figure 12). With regard to the process limitations recited in the claims (e.g. wet etched, dry etched), process limitations in product claims are generally not dispositive on patentability unless it is shown that the process limitations produce a materially different product. MPEP §2113.

***Claim Rejections - 35 USC § 103***

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sherrer '145.

As stated above, Sherrer '145 teaches a micro-machined optical fiber sensor comprising a single crystal silicon substrate, an etched fiber stop whole having two level stop hole (pit) where a hole is disposed in the center of a v-shaped pit and through the substrate.

Although Sherrer '145 fails to specifically teach that the single crystal silicon substrate is <100> silicon, it would have been obvious to use <100 > silicon for the micromachined substrate of the optical fiber sensor disclosed Sherrer '145 since micromachined silicon substrates are conventionally known to use <100> silicon. (See US 5,045,041).

***Allowable Subject Matter***

6. Claims 15-23 are allowable over the prior art of record.

7. The following is a statement of reasons for the indication of allowable subject matter:

As stated above, Sheerer teaches a teaches a micro-machined optical fiber sensor comprising a single crystal silicon substrate having an etched fiber stop whole having two level stop hole (pit) where a hole is disposed in the center of a v-shaped pit and through the substrate wherein the hole has a width less than the minimum width of the top level of the pit, and as stated in the previous office action.

Also, as stated in the previous office action, Nakanishi teaches a photo-detector comprising a silicon substrate having a first etched v-groove in the substrate, a second etched v-groove in the substrate, wherein the second etched v-groove extends in the substrate deeper than the first groove, and a pit in the shape of a linear trench (36) disposed between and adjacent to the first and second pits.

Applicant has amended independent claim 15 and created new independent claims 19 and 21 to incorporate limitations from dependent claims previously indicated by the examiner as not being disclosed by the references.

#### ***Response to Arguments***

8. Regarding the rejections made over claims 10-14 and 25 over the Sherrer reference, applicant has amended independent claim 10 to add the limitations that the wet etched pit has g “a minimum and maximum width” and the dry etched hole “has a width less than or equal to the minimum width of the wet etched pit”. Applicant argues that support for this amendment can be found in applicants Figures 17 and 18. Applicant further argues that the Sherrer reference fails to teach these limitations.

These arguments have been considered, but not deemed persuasive. First, no support for these newly added limitations can be found in applicant's originally filed specification or drawings and 35 USC 112 1<sup>st</sup> paragraph new matter rejections have been made over claim 10 and its dependent claims. Second, the Sherrer reference is still believed to read on these claims since the reference discloses a he two level stop hole having a bottom hole in the located in the top V-groove etched pit which goes through the silicon layer (substrate), and wherein the width of the bottom hole is no larger than the minimum width of the top groove (See Figure 12). Consequently, the reference does teach every limitation of the claims.

Regarding the rejections made over the Nakanishi reference, applicants have amended claims 15, 19, 21 to create independent claims which were incorporated with previously indicated allowable subject matter of dependent claims. Consequently, the rejections have been withdrawn and the claims have been indicated as allowable.

### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,


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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Stein whose telephone number is 572-272-1544. The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 5:00 p.m. If the attempts to reach the examiner are unsuccessful, the examiner's supervisor, Deborah Jones can be reached by dialing 571-272-1535. The official fax number is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 21, 2005

  
Stephen J. Stein  
Primary Examiner  
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